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# OBSERVATIONS

ON THAT

DISORDER

OF THE

CORNER of the EYE,

COMMONLY CALLED

Fistula Lachrymalis.

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*Neque enim credunt posse eum scire quomodo morbos curare  
conveniat qui unde hi sint ignoret; eum vero recte curaturum,  
quem prima origo causæ non fefellerit.*

A. CORN. CELSUS.

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THE  
P R E F A C E.

***B**Y frequently conversing with some of that part of the profession who come to London to attend the Hospitals, and to improve themselves in the Art of Surgery, it has appeared to me that the FISTULA LACHRYMALIS, tho' a very common disease, is one with which many of them are very little acquainted, either with regard to its cause, seat, or method of cure; some are totally ignorant of every thing relating to it, others who have an imperfect idea of its nature and seat, are yet much at a loss how to vary the method of treating it according to its different states and circumstances, upon which distinction the probability of a cure does often in great measure de-*  
a 2 *pend;*



pend ; for if those means which are only proper in one state of the disease are used in another, the patient will be fatigued to no purpose, and the surgeon by being frequently disappointed will be inclined to think those cases incurable, which have only failed through his own mismanagement.

*T*HERE is hardly any chirurgical disorder which requires a more close regard to all its appearances and variations than this does ; and whoever expects to conduct it successfully, must attend to it constantly : this is, perhaps, the great reason why it is so little understood ; the object is too minute, and the process often too long to engage the attention ; besides which, it hardly comes under the name of an operation, the great and almost only object which they who come hither from the distant countries have in view : the operative part of surgery is what they have seen the least of, and therefore they are the more desirous of be-

*becoming acquainted with it ; this desire is a very laudable one, and ought certainly to be encouraged, but still the operative part of surgery is far from being the whole of it, and I cannot help thinking, that by attending a little more to what is called common or practical surgery, our art might still be considerably improved, practitioners rendered more expert, and mankind much benefited.*

*THE merely curing diseases is not all ; that was done (sooner or later) while surgery and anatomy were in their most imperfect state, and while every branch of medicine laboured under many inconveniences which are now happily removed ; but the different methods in which chirurgical disorders are treated, or their cures attempted, will make so considerable a difference in the confinement and sufferings of the patient, as to be very well worth attending to.*



It may possibly be thought foreign to my present purpose, but I cannot omit this opportunity of adding a few words on a subject which appears to me highly deserving of some notice, as its influence may be very extensive and very prejudicial; it is the false idea which the by-standers at an operation generally have of chirurgic dexterity; to which word they annex no other idea than that of quickness: this has produced a most absurd custom of measuring the motion of a surgeon's hand, as jockeys do that of the feet of a horse, viz. by a stop-watch; a practice which tho' it may perhaps have been encouraged by operators themselves, must have been productive of most mischievous consequences; *tute et celeriter* are both very proper characteristics of a good chirurgic operation; but *tute* stands as it should do in the first place, and the patient who suffers the smallest injury from the hurry of his operator has no recompence from the reputation which the latter obtains

*from the by-standers. In most of the capital operations unforeseen circumstances will sometimes occur, and must be attended to ; and he, who without giving his patient unnecessary pain from delay, finishes what he has to do in the most perfect manner, and the most likely to conduce to his patient's safety, is the best operator.*

*I HAVE endeavoured to make the following tract as plain and as intelligible as I can ; and if it should appear prolix to those who are already acquainted with the subject, I must beg leave to observe, that it was not written for their information ; but if any of those who were unacquainted with it before should from hence gain any useful knowledge, my end will be answered, and I shall be very much pleased.*



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## S E C T. I.



THE anatomical structure of the parts concerned in a fistula lachrymalis was, till within these few years, very little understood; the true nature of the disorder, its cause and seat, were much mistaken; other diseases very different from this, and from each other, were confounded under the same general appellation; and the means used to obtain a cure were rough, painful, and very often ineffectual.

THE lachrymal fluid was supposed to be secreted by that little eminence in the inner angle of the eye, now called the

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caruncle, and to flow from thence upwards through the puncta lachrymalia: this caruncle was thought to be the seat of the disease in question, which was said to be produced by a defluxion from the brain on this part, or by an abscess formed within the body of it, or by the lodgment of the tears which were supposed by stagnation to become acrid, and corrosive.

THE tumor in the inner corner of the eye, the frequently attendant ophthalmia, the flux of tears down the cheek, the excoriation of the eye-lids, and the purulent discharge from the puncta lachrymalia upon pressure, confirmed these opinions.

A MORE minute and careful examination into the anatomy of these parts has informed us that the facts are otherwise: we now know that the caruncle is not the organ which secretes the tears, but that this office is performed by a gland  
situated

situated near the outer corner of the eye; that the lachrymal fluid is by nature perfectly innoxious; that the sacculus lachrymalis is the true seat of the disease; and that an obstruction in the nasal duct is most frequently the primary and original cause of it.

THE antients, supposing it in its first state to be a defluxion of the inflammatory kind tending to produce an abscess, had recourse to such general methods and applications as they thought were most likely to prevent such consequences; and these not answering the purpose, they opened the supposed abscess, and enlarged it either by dilatation or excision.

THEY also took it for granted when the discharge was apparently purulent that the bone underneath was carious, and therefore went to work with caustic and cautery to destroy the callosity, and to dry and exfoliate the caries;



and these failing, they deemed the case incurable. The present practitioners finding that an obstruction in the lachrymal sac and duct is the true origin of the disorder, and that an abscess in these parts is most frequently a consequence, and not a cause, have with great industry and ingenuity endeavoured to find out some means whereby this obstruction may be removed, and the parts restored to their natural and healthy state without such pain, destruction, and deformity as the antient methods necessarily produced,

ALL these means have the merit of being founded in anatomy, and are all directed to the same end, *viz.* removing the obstruction, and rendering the natural passages pervious to the lachrymal fluid; when they succeed, the patient gains an advantage, and when they do not, little time is lost; nor is any other method of attempting a cure rendered thereby more impracticable or less effectual :

tual : in this, as in every other part of surgery, the most simple means, if at all likely to succeed, should be tried first; terror and pain should be avoided as much as is possible; but the end must be accomplished; and if the more simple means will not do, others must be submitted to.

S E C T.

## S E C T. II.

**A**S a perfect knowledge of the natural structure and disposition of any of the parts of the human body is the first step toward being acquainted with their diseases, and the alteration thereby induced; and as some of those, for whose use this tract is principally designed, may possibly not have had an opportunity of attaining this knowledge; I take the liberty of premising a short account of the parts relating to my present subject.

THAT the motions of the eye-lids may be performed with the utmost ease, that the tunica cornea may be kept constantly clean, bright, and fit for the transmission of the rays of light, and that dust and other hurtful particles may be immediately washed away, the surface of the eye is continually moistened by a fine limpid fluid.

THIS



THIS fluid is derived principally from a large gland situated under the upper edge of the orbit, near the outer corner of the eye; the gland is of the conglomerate kind, it lies in a small depression of the os frontis, and its excretory ducts, or those by which it discharges the secreted fluid, pierce the tunica conjunctiva just above the cartilaginous borders of the upper eye-lids \*.

WHILE the caruncle was thought to be the secretory organ of the tears, this gland was called *glandula innominata*; but now that its use and office are known, it is called *glandula lachrymalis*.

By irritation from any sharp or poignant particles, a large quantity of this fluid is immediately derived over the surface of the eye; sometimes also the passions of the mind produce an immediate increase of it, and then it is strictly  
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\* These ducts are very conspicuous in some brutes, but not in men.

and properly called tears; a constant secretion of too large a quantity causes a disease, called epiphora, and a deficiency makes the motions of the eye-lids difficult and painful.

ALTHOUGH the fluid secreted by the lachrymal gland is considerable in quantity, yet, when it is not suddenly excited by irritation from without or passion from within, it is so constantly and gradually carried off, as to create neither trouble, uneasiness, nor blemish.

THE edge or border of each eye-lid is formed by a thin cartilage, the figure and consistence of which keeps the lids properly expanded: these cartilages are covered by a thin membrane, and are called cilia; their lower and internal edge do upon every motion of the eye-lids sweep over every point of the surface of the cornea; and as these motions are very frequently performed, and as the secretion of the lymph

lymph is also constant, the eye is by this means kept always moist, clean, and bright.

AT the extremity of each of these cartilaginous borders of the eye-lids, on the side next the nose, is a small papilla or eminence, and in the middle of each of these eminences is a small hole or perforation; these perforations, being made in the substance of the cartilage, are always open in a healthy sound state; they are called the puncta lachrymalia, and their office is to receive the lachrymal fluid as it runs off the cornea along the edges of the eye-lids, and thereby prevent it from trickling down the cheek; that perforation in the upper lid is called the punctum lachrymale superius, that in the lower the punctum inferius.

FROM each of these puncta lachrymalia a small tube proceeds; these tubes soon enter into or form a membranous pouch or bag, situated in the inner an-



gle of the eye, a little below the union of the lids, under the musculus orbicularis palpebrarum: this bag is called the sacculus lachrymalis, and its office is to receive all the lymph brought by the puncta and their little ducts. The upper part of this sacculus lies in an excavation, formed partly by the nasal process of the os maxillare superius, and partly by the os unguis, (a small thin bone just within the orbit;) the lower part of this bag is confined in, and surrounded by, a bony channel, and forms a tube or duct, which descending a little obliquely backward communicates with the cavity of the nose, behind the os spongiosum inferius, by an opening whose size is very different in different subjects, but in general is very small.

THIS tube is called the ductus nasalis or ductus ad nares; and thro' it whatsoever is received by the sacculus from the puncta lachrymalia does in a natural and healthy state pass into the nose.

BOTH the sacculus and duct are lined with a membrane, in structure like to the *membrana pituitaria narum*; from the surface of this membrane a clear viscid mucus is secreted, by which it is moistened and the duct kept pervious; this, like all other vascular parts, is liable to obstruction, inflammation, and all their consequences.

IN a healthy state the fluid secreted by the lachrymal gland and membranes of the eye-lids passes off through the punta, sacculus, and duct, into the nose without any trouble; but in a diseased state, when the membranes are inflamed or thickned, the nasal duct becomes obstructed, whereby the course of this fluid is either much impeded or totally stopt: in consequence of which the natural mucus of the sacculus fills it, and prevents it from receiving the lymph from the lachrymal gland, which therefore runs off the eye-lid down the cheek: the obstruction continuing, and the mu-

cus still lodging, the sacculus becomes dilated, and produces that tumor in the corner of the eye, and that discharge upon pressure which characterise the disease, called fistula lachrymalis; and, in conjunction with every other attending symptom, prove its seat to be in the lachrymal sac and nasal duct.

THIS is a short succinct account of the situation, structure, and use of the parts concerned in the lachrymal fluid; and its passage from the eye into the nose; an account which, though unnecessary to those who are already acquainted with the subject, is absolutely necessary to such as are not; and as the number of the latter is not small, even among those who are daily liable to be called to the care of the disease, I hope to be excused inserting it.



## S E C T. III.

**A**LTHOUGH the seat of this disease and its original cause are the same in almost every subject, yet its appearance is very different in different persons and under different circumstances.

THE principal occasions of these variations are,

1. THE degree of obstruction in the nasal duct.
2. THE state of the cellular membrane covering the sac.
3. THE state of the sac itself.
4. THAT of the bones underneath.
5. THE general state and habit of the patient.

6. THE

6. THE manner in which it has been treated.

THE usual method therefore of calling every obstruction or abscess of these parts by the one general name of fistula lachrymalis, is wrong and apt to mislead.

SOMETIMES this disease is produced by a serous kind of defluxion, by which the membrane of the sac and duct are so thickened as to prevent or obstruct the passage of the fluid through them into the nose; but the cellular substance on the outside of the sac not being diseased, there is no appearance of inflammation.

IN this case the duct is stopt, and the sacculus dilated, without any alteration in the colour of the skin, a fulness appears in the corner of the eye next the nose; upon the application of a finger to this little tumor, a clear, viscid mu-

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cus is discharged through the puncta lachrymalia, and the patient feels no pain, nor any inconvenience except what is produced by the discharge of the mucus and by the trickling of the lymph down the cheek.

SOMETIMES this mucus is not clear, but cloudy, and looks as if it had a mixture of milk in it; at first waking, some of it is always found in the corner of the eye, and the eye-lashes being smeared over with it during sleep, generally adhere together in the morning.

THIS is the most simple state of the disease, what the French call the hernia or hydrops sacculi lachrymalis, and is frequently met with in children who have been ricketty, or are subject to glandular obstructions; and in this state it remains in some for years, subject to little variations as the health or habit varies.



IF the sacculus is not much dilated; the discharge small, and produced principally by pressure, the chief inconvenience is the weeping eye; but which by carefully attending to, many keep from being very troublesome, and rather chuse to bear than to submit to any of the methods proposed for a cure.

IF the dilatation of the sac is considerable, the tumor is more visible, and consequently the deformity is greater; in this state the mucus is generally cloudy, and the quantity which may be pressed out is larger in proportion to the greater dilatation.

IF an inflammation comes on, the tumor increases, the discharge is larger as well during sleep as upon pressure, the skin loses its natural colour and softness, becomes hard, and acquires an inflamed redness, and with the mucus a mixture of something resembling matter is discharged; this added to the painful and  
inflamed

inflamed state of the tumor has been generally regarded as an indication of an ulcer or abscess in the sacculus or duct. An opinion which may possibly sometimes be true, but is often entertained much too hastily.

It has already been observed, that from the surface of the membrane which lines these parts, a thin mucus is secreted, by which it is smeared over in the same manner as is all the membrane which covers or lines the fauces, larynx, and internal parts of the nose, the antra of the jaws, and the sinus's of the sphenoid and ethmoid bones; while the parts are free from disease this mucus is perfectly clear, small in quantity, and passes insensibly into the nose with the fluid from the lachrymal gland; but when the nasal duct is obstructed, it lodges in the sacculus, by irritation is increased in quantity, and often altered in colour, and is discharged at the puncta lachrymalia, either as it becomes too

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much



much for the sac to contain, or as it is forced out by pressure.

THE mucus in this part, as in all others, will either from lodging too long, or from inflammation of the gland or membrane which secretes or contains it, or even from general affections of the habit, put on a yellow purulent colour, altho' there is neither ulcer nor abscess in the part from whence it comes.

MANY instances of this might be produced from many parts of the body, from the urethra, from the vagina, &c. &c. but it is most remarkably the case of the mucus from the sinus's of the cranium which communicate with the nose : and therefore the discharge from the same obstructed sacculus lachrymalis will be somewhat different at different times, in quantity, colour and consistence, as the sac may be affected, or as the health or habit of the patient varies.

THESE



THESE two fluids, pus and mucus, differ so widely from each other in their nature, constitution, sources, purposes, and effects, that the distinguishing them properly from each other seems to be a matter of no small importance.

IF I conceive rightly, mucus considered in a general sense is the effect of a natural secretion, made by glands, membranes or other bodies appointed for that purpose; and is so far from being originally the consequence of disease, that in a proper quantity it is absolutely necessary for some of the most important purposes of the animal œconomy; which purposes, when this fluid is quite deficient, are ill-executed, and some kind of disease is produced.

WHOEVER will reflect on the uses of this fluid in the intestines, in the joints, in the sheaths or capsulæ of tendons subject to much or strong action, in the sinus of the skull which serve the purposes

of speech, in the cavity of the nose where the olfactory nerves are distributed, in the cryptæ of the tonsils, in the prostate gland, larynx, trachea, urethra, &c. &c. will be convinced of the truth of this.

PUS or matter is no natural secretion; suppuration, tho' it is an act of nature when some of the parts of the body have been forcibly divided from each other, is nevertheless to be regarded as the effect of violence and destruction; for without entering too minutely into the origin or cause of matter, I believe I may venture to affirm that the dissolution of some of the solid parts of broken capillary vessels, and a mixture of some part of the juices circulating thro' them, are absolutely necessary to its production.

MUCUS, like some other natural secretions, may by irritation from external objects, or by relaxation of its secretory organs, be increased to a quantity far beyond what is necessary or useful,  
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and in this respect become a disease; of this many parts of the body will furnish proofs, witness the effect of all ster-nutatories, the irritation of a stone in the bladder, the fluor albus, and simple gleet; but though large discharges are hereby made, yet they are by no means to be attributed to any breach or laceration of the parts whence they proceed.

Pus or matter, however necessary its appearance may be in the progress towards healing a wound or sore, can yet never be produced even in the smallest quantity without some degree of erosion, some breach or division in the natural structure of the parts whence it comes; and when the breach is healed, the discharge ceases.

MANY other distinctions in the nature and properties of these two fluids might be produced; but if these already mentioned are just, they will be sufficient to evince the impropriety of confounding



founding them together, either with regard to theory or practice.

THE two circumstances of pain and purulent colour have been the occasion of that absurd supposition, that the discharge from the urethra in men and the vagina in women, in the virulent gonorrhea is pus or matter from ulcers or abscesses in those parts, altho' the repeated testimony of those who have examined the parts of persons so diseased (immediately after death) has been often produced to the contrary, and tho' the discharge itself properly examined will always prove to the contrary: the inside of the urethra and of the vagina are always smeared over by a mucus, which mucus is naturally clear and not more than is requisite for the purposes it is designed for, but will be increased in quantity and altered in colour by irritation, inflammation, or any other injury done to the parts which furnish it, in such manner as fully to account for all the appearances of it in a  
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gonorrhea without supposing any breach or ulceration; and whoever will carefully attend to the discharge made from any purulent ulcer, during its different stages from its formation to its healing, will find them widely different from that which issues from the urethra in the different stages of a gonorrhea, and therefore requiring a very different method of being treated.

AGAIN, in the case of strictures of the same passage, the discharge occasioned by a bougie properly made and judiciously used, is a purulent coloured mucus and not matter, tho' it is generally so called; it is by the discharge of this mucus, added to the dilatation of the passage, that the relief is obtained; and the bougie that produces true matter does much more harm than good, as it must do it by erosion, and consequently must make a sore where there was none. Defluxions on the trachea and larynx often wear a deep purulent colour toward the close, so as to de-

ceive



ceive the ignorant into an opinion that it is matter from the lungs; but no judge of these things ever had recourse to ulcers or abscesses for such a discharge.

THE arguments drawn from the quantity are as erroneous as those from the colour, &c. How very large, and foetid discharges are made from behind the prepuce of many persons perfectly free from all taint, and from what can hardly be called an excoriation? to what a length of time will they continue, if neglected? and how immediately are they cured by washing the parts with a spirituous or vitriolic wash? and the fluor albus, even in some of its worst circumstances, has often been much moderated, not to say cured, merely by washing away that acrid mucus which lodged in the rugæ of the vagina, and continually irritated a fresh discharge; a method extremely well adapted to relieve parts too much relaxed and continually irritated by being constantly smeared



smear'd over by a purulent mucus, but very unequal to the cure of ulcers or abscesses.

IN short, the two fluids are so absolutely different and distinct, that the blending them together in our ideas of diseases proceeding from either, is of the utmost consequence, and cannot be too seriously considered ; it is a subject on which a great deal might be said, as it would comprehend, or have relation to, a number of diseases, some of which are most certainly not sufficiently understood or attended to, and in which some of the noblest and most useful parts of the human frame are much interested.

I MUST desire not to be misunderstood, as if I meant to assert that there never is abscess or ulcer in the lachrymal sac and duct ; I only mean to signify, that it is my opinion that the yellow or purulent colour of the discharge is no proof of either ; that this colour may be, and

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most frequently is, dependant on other causes ; that tho' by the suppuration of the cellular membrane covering the sacculus, the upper part of the latter is sometimes floughy and bursts, yet the lower part of it, and the nasal duct, are often at the same time perfectly sound, and that there never is an ulcer or abscess within, let the discharge appear ever so purulent, while the skin is entire and preserves its natural colour and softness: circumstances of great consequence in the treatment of this disease.

IF the cellular membrane inflames, the redness is of greater or lesser extent in different cases ; in some it is confined merely to the surface of the sacculus in the corner of the eye, in others it spreads still farther and affects the eye-lids, cheek, or side of the nose.

IF the puncta lachrymalia are naturally large, the contents of the sacculus will pass off so freely, that tho' the inflammation

mation is considerable, the sacculus a good deal dilated, and the discharge apparently purulent, yet the skin will remain entire; while it does so, the disease is by the antient writers called simple, imperfect, or anchylops.

BUT it often happens, either from the puncta being too small to let the matter pass off freely, or from the cellular membrane inflaming and becoming sloughy, that the skin covering the sacculus bursts, and an opening is made externally in the angle of the eye; when this happens, the disease is said to be perfect, and is called aigylops or ægylops.

IN this state the discharge which used to be made through the puncta lachrymalia is made principally through the new opening in the skin, and by exco-riating the eye-lids and cheek, increases the inflammation; in some the matter bursts through a small hole, and after it has discharged itself, the tumor subsides,



and the parts become cool ; in others the breach is large and the sore foul and sloughy, the skin remains hard and inflamed, as well as the caruncle and eyelid, and the discharge is large ; sometimes when the case has been neglected or ill-treated, a loose fungus occupies the cavity of the sacculus, and sometimes the bone underneath is found carious.

THIS last circumstance was by the ancients supposed to happen very often ; but since its frequency has been doubted, and the case has been more minutely enquired into, it has seldom been met with, and may be regarded as a rare thing, unless the habit of the patient is infected by the lues venerea, or the sac has been the seat of a variolous abscess.

THESE are the general appearances of this disease, when considered by itself ; but it very often happens that it is combined with other diseases both local and general, by which the prognostic as well

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as the method of treatment must be varied ; for instance, it is often connected with an habitual ophthalmia or lippitudo ; sometimes with an ozena or some disease of the membrane and cells of the ethmoid bone ; sometimes it is produced by the pressure of a polypose excrescence in the cavity of the nose ; the habit in some is infected with the lues venerea, of which this may be a symptom ; strumous glandular obstructions are its too frequent companions ; and what is worst of all, it is sometimes cancerous.

S E C T.

## S E C T. IV.

**F**ROM what has been said, it appears that a lodgment of a quantity of mucus mixed with the fluid from the lachrymal gland, is the great characteristic of this disease.

Now as this lodgment is originally produced by an obstruction of the natural passage from the sacculus into the nose, it follows that the removal of that obstruction is the first curative intention.

To attempt this is almost always rational, and very frequently successful; in some cases, it is indeed impracticable, the natural passage being destroyed or rendered useless; and when this happens, all we can do is to endeavour the formation of an artificial one.



THE practicability of the former, and the necessity of attempting the latter, depend entirely on the state and circumstances of the disease; these, though subject to a good deal of variety, may, for method's sake, be reduced to three general heads, under which all lesser distinctions may be comprehended.

1. SIMPLE dilatation of the sacculus and obstruction of the nasal duct, without any inflammation, and the discharge (upon pressure) a mucus either quite clear or a little cloudy.
2. INFLAMMATION, abscess, or ulceration of the same parts, with the discharge of a purulent mucus, or of matter.
3. OBLITERATION or destruction of the natural duct, attended sometimes with caries of the bone.

THESE will, I think, comprehend every state and circumstance of the dis-

ease; and according to these differences must the treatment be varied.

THE antients supposing it in its first state to be an inflammatory defluxion from the brain, on the caruncle, tending to suppurate, directed their first attention to prevent such consequence; for this purpose, they employed bleeding, purging, issues, setons \*, collyria and refrigerant applications of all sorts; and these not succeeding, they had recourse to such as they thought would hasten supuration of the abscess †.

By

\* Most of the antient writers have forms of collyria, epithems, and applications of such kind; and many of them speak much in praise of issues and setons; among the latter Hildanus is remarkable, ‘*omnium vero præstantissimum est setaceum, materiam enim ad oculos fluentem potenter ad se trahit et evacuat, caput ab omnibus excrementitiis humoribus expurgat, et egregie corroborat: quid plura? tanti est momenti ut inveteratam fistulam lachrymalem sine hoc præsidio vix curari posse.*’

† MR. Serjeant Wiseman most certainly mistook this disease for a tumor of the encysted kind, and treated it accordingly; his words are, ‘*Ægylops is a tumor of the inner canthus of the eye, either scrophulous, atheromatous, or of the nature of a meliceris, or sometime with inflammation.*’ The causes  
‘ of



By improper applications in some cases, and by neglect in others, it frequently happened that the cellular membrane became inflamed, and the upper part of the sacculus burst; the discharge of matter from hence, together with the inflamed appearance which the parts round about generally have at this time, confirmed their opinion of an abscess within; if the orifice was small, they enlarged

‘ of ægylops are the same that produce the like tumors in other places; but sometimes it is made by fluxion, and appeareth first as a phlegmon; if it be struma or atheroma, it is made by congestion, &c.’

‘ THE indications of cure are taken from the ægylops, whether it be in its beginning with inflammation, or by congestion passing its matter forth under the cilium into the eye; in which case it is fistulated. Anchylops hath also its peculiar way of treating as other tumors of the glands.’

WITHOUT any desire or design to criticise, I believe I may venture to say, that no man who is not previously acquainted with the nature of this disease, will learn from hence that its seat is in the lachrymal sac, and that an obstruction in the nasal duct is the first cause of it.

To come still nearer to, or indeed even into our own times. Dr. Daniel Turner compiled a treatise of surgery, which was universally read and dispersed all over the kingdom, and was at that time looked upon by many as a pretty true representation of the London practice. The Doctor says ‘ Anchylops or ægylops  
are



larged it, and then attempted a cure by endeavouring to incarn, or fill up the hollow from the bottom; as they were not acquainted with the proper use of the nasal duct, they took no care to free that from its obstruction, but dressed the sore as a common abscess; this proving very frequently unsuccessful, the discharge continuing to be large, and the sore being filled up with fungus, or contracting

‘ are diseases of the internal canthus of the eye, in  
 ‘ which the lachrymal gland is concerned, and from  
 ‘ whence the fistula of the same part is denominated.  
 ‘ The prognostic may be gathered from the method  
 ‘ of cure; in which, universals premised, such as bleed-  
 ‘ ing, purging, &c. you may attempt to resolve the  
 ‘ humour by some gentle anodyne or discutient cata-  
 ‘ plasm; but if it inflame and suppurate, you must  
 ‘ hasten maturation as well as the discharge, by reason  
 ‘ of the part it lies upon. But when notwithstand-  
 ‘ ing your endeavours to incarn and agglutinate, the  
 ‘ matter still continues to discharge itself not only by  
 ‘ the outward orifice, but also *under the cilium* into the  
 ‘ eye, you must try some powerful desiccative.’

THE true seat and nature of the disorder is not more explained by this, than by what Serjeant Wiseman has said: and not to meddle with the method of cure proposed by these gentlemen, I think it is plain that neither of them had a clear idea of the disease; they considered it as a strumous encysted tumor, or as an abscess of the caruncle, which they both mistook for the lachrymal gland; and neither of them were properly acquainted with the situation, use, and structure of the lachrymal sac and duct.

tracting to a narrow fistulous orifice, they then suspected the bone to be tainted, and accordingly made their way down to it, either by removing the parts with a knife\*, or by destroying them with cautery or caustic.

BUT since the true use of the nasal duct has been known, since it has been discovered that an obstruction in this is the first cause of the disease, and that what was taken for the cavity of the abscess is the sacculus lachrymalis, both the intention and the means have been somewhat changed.

IN the first and most simple state of this disease, *viz.* that of mere obstruction

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without

\* ‘HAMULO summum ejus foraminis excipiendum, et totum id cavum sicut in fistulis dixi usque ad os excidendum.’ CELSUS.

‘Quod si igitur per summa ruptus fuerit abscessus totum id quod eminet usque ad os excidendum.’

PAULUS.

‘Si vero per hæc medicamenta non curetur aut recidivaret postea, signum est quod os est corruptum de subtus, quare tunc oportet locum detegi et os corruptum removeri.’ LANFRANC.



without any inflammation, modern practitioners have taken a good deal of pains to restore the parts to their natural state and use without any wound or division.

THE introduction of a probe, the injection of a fluid, and a piece of machinery to make a constant compression on the outside of the sacculus, are the principal means by which this has been attempted.

SOME few years ago M. Anel made a probe of so small size as to be capable of passing from the eye-lid into the nose, being introduced at one of the puncta lachrymalia and passing through the sacculus and duct; with this probe he proposed breaking through any small obstruction that might be in the way of it.

HE also invented a syringe, whose pipe is small enough to enter one of the puncta, and by that means furnish an  
 oppor-



opportunity of injecting a liquor into the sacculus and duct; and with these two instruments he pretended to be able to cure this disease, whenever it consisted in obstruction merely, and that the discharge was not very purulent.

THE first of these, *viz.* the passing a probe has a plausible appearance, but will, upon trial, be found very unequal to the task assigned it: the very small size of the probe, its necessary flexibility, and the very little resistance it is capable of making, are manifest deficiencies in the instrument; the exquisite sensation of the lining of the sac and duct in some, and its inflamed and spongy state in others, are great objections on the side of the parts, supposing it capable of answering a valuable end; but of this it is quite incapable.

THAT the passing a probe from one of the puncta lachrymalia into the nose is very practicable, I know from experience;

ence ; but I also know from the same experience, that the pain it gives, and the inflammation it often excites, are much greater than any benefit that does or can arise from it.

It is said by several writers on this subject, that the principal use of this probe is to remove any obstruction of the little ducts leading from the puncta to the sacculus ; and the obstruction of these ducts is often mentioned as a part of this disease, by which one would suppose that it happened very frequently, whereas in truth it is seldom if ever met with ; and, when it does occur, can never produce a fistula lachrymalis, the principal characteristic of which is a discharge of mucus from the eye, upon pressure ; this discharge is made from the sacculus through the puncta, and thereby proves that the latter are open ; the passage therefore of a probe thro' these ducts is quite unnecessary, since a stoppage of them could never produce a



fistula lachrymalis, whose characteristic is an obstruction to the passage of any thing from the sac into the nose, and not from the eye into the sac.

THE syringe, if used while the disease is recent, the sac very little dilated, and the mucus perfectly clear, will sometimes be serviceable ; I have used it where I think it has been much so. I have by its means injected a fluid thro' the sacculus into the nose ; and in two or three cases the patients have got perfectly well. I have also tried it in others without success, though I still think it may be very advantageously used in some cases ; in which a few trials will render the execution of it very easy both to the surgeon and patient.

FABRICIUS ab Aquapendente invented an instrument, which was so contrived as by means of a screw to make a pressure externally on the lachrymal bag ; from the use of which, he says his  
patients



patients received much benefit. This instrument has been improved by later practitioners, and is recommended by them as very useful.

ALL the good that may be expected from compress and bandage, this instrument is capable of producing; but it is also liable to the same objection, *viz.* the not being able to determine the degree of pressure; for if it be so great as to bring the sides of the upper part of the sac into contact, all communication between it and the puncta is thereby stopt; if it be but slight, the accumulation of mucus is not prevented; and in neither case does it at all contribute to the removal of the obstruction of the nasal duct, the first cause of the disorder.

IF the intention was to procure an union of the sides of the sacculus as in common abscesses, and this pressure could be continued uniformly and constantly, it might possibly answer some purpose; but

but as that is not the intention, pressure, whether made by an instrument or by bandage, does very little toward a cure; nor did I ever see one effected by either, though I have often tried both.

THAT some slight obstructions have gone off while compression was used, I do not deny; but am much in doubt concerning the share which that had in removing them; my reason for entertaining this doubt is, that I have never seen a case, in which the sac was dilated to any degree, or in which the mucus lodged in any considerable quantity, that was cured by pressure of any kind; and I have seen some cases where the sacculus was but little dilated, and the mucus small in quantity, and clear in colour, in which a regimen and medicines prescribed for the general habit have removed the obstruction, while the only external application was a vitriolic collyrium.

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THESE

THESE are the methods prescribed in this state of the disease ; methods which make a good figure in theory, but which do upon experiment fall in general so short of what is said of them by writers, and do so seldom produce a cure, that though they are by no means to be totally laid aside, yet a practitioner should be very cautious in promising success from them : if in the application they give little or no pain, and produce no inflammation, they may be used while any benefit seems to arise, or can reasonably be expected, from them ; but if they irritate, give pain, or produce inflammation, they will certainly do harm: any defluxion of the inflammatory kind will infallibly add to the obstruction of the nasal duct, and to the dilatation of the sacculus ; and if the cellular membrane covering the latter is affected, the disease will be thereby brought from its first and most simple state into the second, *viz.* that in which the skin is inflamed and the discharge discoloured.

ON



ON the other hand, if the sacculus is not much dilated, the mucus clear, and capable of being pressed out with little force; if the skin and cellular membrane are not inflamed, and there is no hardness round about, by a little attention on the side of the patient to prevent the bag from becoming too full, by the frequent use of a vitriolic collyrium to keep the eye-lids clean and cool, and by carefully avoiding all such things as irritate the lining of the nose, or suddenly produce a flux of fluid from the lachrymal gland, this disease may in some subjects for many years, nay even for life, be kept from being very troublesome or inconvenient.

BUT if either the surgeon or patient have a mind to try what any of the above methods are capable of doing, I have mentioned the caution most necessary to be observed, *viz.* to desist as soon as they give much pain, or produce any inflammation.

I SHOULD now proceed immediately to the second state of the disease ; but as the *French* Academy of Surgery have lately published some papers upon this subject, it is necessary to observe that these gentlemen have proposed two or three methods of removing the obstruction in the nasal duct, somewhat different from those already recited : these are,

1. THE passing a probe thro' the nasal duct into the sacculus, being introduced at its orifice behind the os spongiosum.
2. THE injection of a fluid by the same orifice ; and
3. THE passing a seton from the punctum lachrymale superius thro' the sac and duct into the nose, there to remain (being occasionally shifted) till the cure is completed.

For these purposes they have invented and given draughts of a number of probes, algalies, syringes, cannula's, and other instruments, and the whole process is made to appear very easy and successful; but whoever will consider the extreme smallness of the orifice of the nasal duct, and the manner of its termination in some subjects, the variation of it in different people both as to size and situation, and the alteration often made in it by the disease, the various situation and disposition of the ossa spongiosa, the the extreme sensibility of the membrana narium, and the defluxions it is liable to, will easily conceive what difficulty and uncertainty must attend attempts of this sort; to which may be added this consideration, that infants and young children are often the subject of this disease, in whom such processes are absolutely impracticable.

THE second state of the disease is *that in which the parts are inflamed or*  
*ulce-*



*ulcerated, and the discharge is matter mixed with mucus.*

IN this state there is no remedy without opening the sacculus, which will be done more advantageously before there is any breach in the skin, than if it be deferred until the cellular membrane becomes sloughy, as a wound made by the knife will cause a much less disagreeable scar than that which necessarily follows upon the bursting of the sacculus, the one being a simple division of the skin, the other a loss of substance more or less. As this is a certain advantage attending the opening the sacculus at this time, and as no benefit can possibly be expected from deferring it longer, it may, I think, be established as a general rule, that the lachrymal bag should be opened as soon as the skin and cellular membrane are so inflamed as to shew any tendency toward sloughing or bursting.

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THIS opening should be made by incision ; and authors have been very particular with regard to the place, manner, and form of it.

THEY have directed it to be made in a semilunar form, with its concave part respecting the eye, and the union of the lids is to be exactly opposite to the center of the incision ; this lunated figure was designed to correspond with the course of the fibres of the orbicular muscle, a transverse incision of which, or of its tendon, was thought to produce an inversion of the eye-lid ; but as this is now known not to be the consequence of such division, no such regard need be paid to this muscle or its tendon, the latter of which must always be cut thro' as it lies upon the surface of the sacculus ; all that is necessary to observe, is to keep the incision at a proper distance from the juncture of the eye-lids, and to make it large enough ; its form may full as well be straight as semilunar, and the best instru-

instrument to make it with, is a small crooked bistory; the point of which should be thrust into the sac, just above the edge of the orbit; the wound should be continued the whole length of the former, cutting from within outward, and taking care not to hurt the hinder part of it: if the sac is burst, the choice of place is already determined, and the incision must be continued from that orifice upward or downward, or both, as shall be found necessary, in order to divide all that part of the sacculus which is above the edge of the orbit.

By this incision an opportunity is gained of knowing something of the inside of the sac and duct, and of determining the future method of treating them.

It has been already observed that the obstruction sometimes is but slight, and the disease consists principally in a dilatation of the sacculus; in this case it hap-



pens, not very infrequently, that after the incision is digested, and the little inflammation occasioned by it is gone off, the sacculus will contract, and a few superficial dressings with moderate pressure will heal it, the lachrymal fluid will resume its wonted course, and no disease remain.

THAT this happens sometimes is well known, and perhaps would happen much oftner, if the absurd manner in which this disease is generally treated after opening the sacculus did not prevent it; in this state success is to be expected from the gentlest treatment only; and whatever irritates, inflames, or destroys, will infallibly do mischief.

IF this simple method does not succeed, or from the degree of obstruction does not seem likely to succeed, it becomes necessary to try others: the point to be aimed at, is to render the nasal duct pervious to the lachrymal fluid; and

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this end should be obtained by such means as give the least pain, excite the least inflammation, and leave the parts as near as may be in their natural state.

THE dilatation of the duct is to be effected as that of the urethra is, *viz.* by frequently passing something through or into it, which will gradually distend it without destroying its texture \* ; for this purpose, a probe either of silver or of whalebone, a piece of cat-gut, a plaster bougie, or any thing of the like sort should be passed in at each dressing ; and when this has been done for a few days and the parts will bear it, the cat-gut or bougie may be left in between one dressing and another, and renewed every day ;

\* THIS is a caution extremely necessary to be observed in the cure of strictures of the urethra ; the intention in this case is gradually to distend the passage, and to procure an increased discharge of mucus from the lacunæ, which should be done by means which give as little pain as possible ; whatever irritates much, or gives pain, will certainly increase the dysfury, and render the cure more difficult ; and if by accident an inflammation does come on, the first thing that is to be done is to take care of that.

day ; the injection also of a detergent liquor at each dressing, by means of a proper syringe with a small crooked silver pipe, will be found very useful.

WHATEVER the means are which are made choice of to enlarge the duct by, the application and use of them will be rendered much easier, by having moderately dilated the sacculus for a day or two with dry lint or prepared sponge ; for by this means the beginning of the duct will be fairly in view, and there will be little or no lodgment of matter.

A JUST idea of the size and direction of the nasal duct, both in a natural and diseased state, is absolutely necessary in the use of any of the above means ; whoever has formed a notion of it from viewing only its bony channel in a dry skull will, upon experiment, find himself much deceived with regard to its diameter in a living subject ; the mem-



brane which lines it is of some thickness in a natural and healthy state, and when it is inflamed or obstructed becomes so much thicker as to render the passage of any thing thro' it sometimes very difficult; the means whereby this dilatation is to be effected, must be left to the surgeon, who will vary them according to the circumstances of the case; all that I mean to do here, is to point out the intention which ought to be pursued.

I SHALL say nothing of the old method of cutting or tearing out the upper part of the sacculus, or destroying it by ol. vitriol. lapis infernal. or other caustic medicines, they being so very absurd and so contrary to every rational intention, as to require no animadversion; they were founded upon an error in anatomy, the correction of which error puts them out of all consideration.

BUT though the destruction of the sacculus professedly, is allowed to be  
wrong,

wrong, and therefore practised only by the ignorant, yet the same event is often brought about, when it is not intended.

It is still a custom with many, after they have opened the sac, to fill the cavity of it with lint, either in the form of tents or dossils, and generally to charge these with a medicine of the escharotic kind, such as mercurius corrosivus ruber, either in powder or in ointment; by which means the inflammation is increased, the skin hardened, and the inside of the sac rendered sloughy, and put under a necessity of casting off.

THIS manner of dressing is derived from the antient method of treating this disease while it was supposed to be an abscess of the caruncle with a carious bone underneath, and has been continued with design to destroy callosity, and procure a more firm incarnation.

IF

IF to destroy the natural passages and to fill up the cavity with new flesh was the true curative intention, this method of dressing might be proper ; but as that is not the intention, there seems much impropriety in it.

THE point aimed at, is to obtain a free discharge for the lachrymal fluid from the eye into the nose through the natural conduit, the preservation of which is often in our power ; but this method of cramming in so much lint, and dressing with escharotics, frustrates the proper intention, renders a simple case complex, and at best retards what it is designed to expedite.

ALL dressings are in fact extraneous bodies ; and therefore in parts that are of quick sensation, easily irritated, and liable to be inflamed, cannot be too soft or light : suppuration is an act of nature not of art, and is always best performed when the former is least disturbed ; whatever lies

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easiest contributes most to its being well executed, and whatever gives pain irritates the termination of the nerves, or renders the capillary vessels crisp and hard, will infallibly prevent it.

MANY instances might be produced of painful sores, with hard inverted lips and edges, occasioned merely by stuffing in a quantity of escharotic dressings, under the notion of keeping down a fungus and incarning from the bottom; while these very dressings, by giving pain and obstructing the circulation, increase the hardness of the parts round about, and prevent that very incarnation they are used with design to procure.

THIS is a general truth, and will hold good in all the parts of the body, even in those where plentiful suppuration is most wanted; but in the particular case of which I am now speaking, in which suppuration is wanted only from the divided lips of the incision and in which the  
lower

lower part of the sac, and all the duct, are very often in a perfectly sound state, a hard tent or a number of small doffils charged with the præcipitate ointment, and crammed in tight, generally produce pain and inflammation both of the eye and caruncle, and render the edges callous; by all which, as well as by destroying the communication between the puncta lachrymalia and sacculus, they counteract every proper intention of cure; whereas an easy method of dressing does not only prevent these evils, but is the only method of removing them when they have been brought on by a contrary one.

I WOULD not be understood by this, to mean that mere superficial dressing is all that is required in this case; no, a moderate distention of the upper part of the sacculus is absolutely necessary at first; but this distention should be effected gradually, and without the use of corrosive applications of any kind, and should be no more than is necessary to-  
wards

wards getting at the duct and removing the obstruction ; when this point is obtained, the sore should be permitted to contract, by gradually lessening the dressings until it is quite closed, which in many cases it may very safely be suffered to do, and a perfect cure will be the consequence.

IT is also true that many of these cases prove extremely troublesome, especially in scrophulous habits ; in some of which the cavity of the sacculus is so diseased as to be filled up with fungus, and to require the use of an escharotic.

OF all the medicines of this kind the lapis lunaris or lunar caustic is by much the best, as the pain it gives is momentary, and as it leaves no hardness ; but if it is used in this case, the eye must be defended by closing the lids, and holding a piece of rag tight in the corner to  
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catch



catch the solution of the caustic, and keep it from getting in and spoiling the cornea, which, if not prevented, it will do; with this caution it will be found very useful, whenever such kind of application is necessary, and will in a few times using reduce a considerable fungus, without increasing the scar or the hardness\*.

FROM the unavoidable inflammation of the eye-lids and eye, from the irritation of the dressings, and from the necessity of keeping the eye bound down, a large discharge of tears, matter and  
mucus

\* DR. Monro of Edinburgh, in a very ingenious paper on this subject, published in the Medical Essays, advises to make a passage with an awl thro' the fungus, and afterward by means of a probe to draw a seton into the nose; which seton may be armed with such medicines as may serve either to repress the fungus, or establish and heal the passage.

I CANNOT say that I have ever found it necessary to use the awl, but have reaped much advantage from the passage of the seton where it has been practicable; which from the different disposition and size of the ossa spongiosa is sometimes easy to execute, and sometimes impossible.

mucus is made at first, by which the parts about are heated and excoriated ; therefore fomentation, cooling collyrias, eupulotic cerates, frequent dressing, with whatever can contribute to keep the parts clean and cool, must be serviceable as well as pleasant ; nor should the use of a regimen and such medicines as are proper for the habit of the patient be neglected.

DURING the whole time that the fore is healing and contracting, the duct should be constantly kept pervious ; and when the fore is quite healed, I would advise the continuance of a moderate pressure, in order to prevent any new lodgment or accumulation of mucus in the sacculus, which will sometimes happen in spite of all endeavours to the contrary, even though the nasal duct remains free and open all the time.

WHETHER the sacculus in a healthy and undilated state is endued with a contractile power, which it loses by being distended, or to what other cause it may be owing, I will not pretend to say ; but am very sure, that in some of the cases which have failed of cure under the foregoing treatment, and in which the mucus has again lodged in the sac, I have upon a second opening found the nasal duct perfectly free and open, without any obstruction to the passage either of a probe or of a fluid, and have afterward obtained a cure by again healing the wound under a compress of lint wrung out of sp. vin. renewed twice or thrice in the day ; and others I have also seen, which no means but perforation of the os unguis would cure, though the duct remained open in some of these also.

IN all these cases, different circumstances in the patient or the disease must

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necessarily produce variation in the treatment both general and particular ; badness of habit and the combination of other diseases will add to the difficulty and trouble ; and after all that has been hitherto proposed, some will not stand sound, but will require other surgical assistance, to be found in the next section.

## S E C T.

## S E C T. V.

**T**H E third state of this disease is (as I have before observed) that in which the natural passage is quite obliterated and destroyed, and in which the bone is sometimes found carious.

ALL the methods hitherto described are calculated to preserve the natural passages, and to derive the lachrymal fluid again thro' them, and in this they are frequently successful ; but it sometimes happens, in cases where the bone is carious, or from great inflammation, or the too free use of escharotic dressings, that the sacculus and duct become sloughy, and the preservation of the natural passage is impracticable.

W H E N this is the case, all that the art of surgery can do is to attempt the formation of an artificial one.

I HAVE

I HAVE already taken notice, that the upper and hinder part of the sacculus lachrymalis is firmly attached to the os unguis, a small thin bone just within the orbit; this bone is so situated, that if it be by any means broke through or removed, the two cavities of the nose and orbit communicate with each other, consequently the os unguis forms the partition between the hinder part of the sacculus lachrymalis and the upper part of the cavity of the nose; and it is by making a breach in this partition, that we attempt the formation of an artificial passage for the lachrymal fluid.

THIS operation is no invention of the moderns, considered merely as perforation: the antients perforated the os unguis both with a cautery and with a trepan; but tho' the operation was executed much in the same manner in which it now is, yet I think it is very clear it was not done with the same intention.

FROM



FROM the accounts they have left us, it is plain that they supposed this disease to be always attended with callosity, and frequently with a caries, and that the surest way to obtain a cure was to lay the bone bare; this they effected either by caustic or cautery, according to the humour of the surgeon or the fears of the patient; if caustics were used, they waited the separation of the eschar, in order to know the state of the bone, and if they found or believed it to be altered, they applied an actual cautery to it: if the patient did not object, they frequently made use of the cautery at first instead of a caustic \*.

IF

\* ‘ Oculo et cæteris junctis partibus bene obtectis os ferramento adurendum est vehementius; quod si jam carie vexatum est quo crassior huic squama abscedat quidam adurentia imponunt.’ CELSUS.

‘ CUM isto pulvere in veritate fere mortificabam omnes fistulas curabiles et cum cauterio ferreo aut æneo.’

‘ FACTA mortificatione tali totius carnis usque ad os cum pulvere aut unguento antedictis, superpone mortificato butyrum aut axungia ut eschara removeatur remoto mortificato et eschara aspice os, et si fuerit corruptum, cauteriza ipsum usque ad ejus profundum, &c.’ GULIELMUS DE SALICETO.

IF the bone, to which the iron was applied, was the os unguis, it was too thin to bear much heat or much pressure, consequently was easily burnt or broke through, and thus an opening was made into the nose.

THE same bone was sometimes perforated with a terebra.

By both these methods, a cure was frequently obtained; but I think it is past all doubt, that the cautery was used to desquamate and get rid of a supposed carious bone, and the terebra either for the same purpose, or to discharge that matter by the nose (during the attempt to heal the sore) which either lodged in

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\* ‘POSTEA si homo fuerit delicatus, per illud foramen mittatur canellus ferreus vel æneus subtilis usque ad profundum si poteris, et per ipsum canellum ferrum candens immitte et fistulæ radices decoque; et si timuerit ignem immitatur pillula de unguento rupturio.’ ROLANDUS.

‘OSSE detecto ferrum imprime calidum supra ipsum et ipsum cauterium mediocriter comprimendo, postea totum vulnus reple cum oleo rosarum misto cum vitello ovi.’ LANFRANC.



the facculus, or ran down the cheek ; for as they most certainly were not acquainted with the natural passage of the lachrymal fluid, it is highly improbable that they did, by means of this perforation, intend the formation of a new one. Destruction of the callosity and exfoliation of the caries were all they had in view, and the perforation of the os unguis was either accidental or made merely for a temporary discharge of matter\*.

#### INDEED

\* PAULUS mentions perforation with a terebra, as the practice of some in his time ; but from what he says, it is plain he did not practise it himself, or think it necessary, and that he regarded it only as a depending orifice. His words are ‘ Quod si jam carie vexatum est, ferro candenti acuto ac in cuspidem abeunte aduremus, spongia frigida madente oculo imposita. Sunt qui post carunculæ excisionem terebra usi, humorem aut pus in nares derivarint ; nos autem satis habuimus eousque solum ferramentis ad ægilopem accommodatis adurere ut squama abscederet.’ PAULUS.

This is copied verbatim by Fab. ab Aquapendente.

PETRUS de Marchetti, tho’ perfectly sensible that the os unguis was often broke through by the cautery, yet insists upon it that it serves no other purpose, than to hasten the exfoliation. ‘ Præterquam quod hujus perforationis non alius sit usus, quam ut os perforatum aut inustum citius abscedat *cujus loco natura carnem aliquam generat, &c.* Graviter proinde errant



INDEED, if we attentively consider what the antient writers have said on this subject, I believe it will appear, that though a perforation into the nose was often a consequence of their using either a terebra or a cautery, yet the operators had no very accurate knowledge of the parts they made so free with, no precise idea of the bone through which their instruments passed, or of the place most immediately proper for the application of them ; sometimes they perforated the os unguis, sometimes the cautery or terebra was thrust down the bony channel of the natural nasal duct, and sometimes these instruments were applied to the nasal process of the maxilla superior : the

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errant qui existimant perforationem hoc commodum præstare ut materia per nares effluat, licet hujus operis os perforatum citius abscedat. Observandum tamen non esse perforandum os nisi præsentē maxima ipsius corruptione, sola siquidem ejus superficie corrupta aut alterata fuit fuerit partem læsam abradere.' PET. DE MARCHETTI.

AND M. Verduc, a more modern writer, says expressly, ' Le meilleur remède pour amortir l'acide qui cause la carie c'est de passer un cautere actuel légèrement sur l'os *sans le percer.*'

directions we find in the best of these writers, to rasp the bone (*scalpris abradere*), and to impress the hot iron with some force that it may be the sooner exfoliated (*ut citius squama abscedat*) plainly prove either that they were not aware of the nature and structure of the *os unguis*, or that they did not intend to apply their instruments to it; if the former was the case, the perforation was in general accidental; if the latter, they must frequently do mischief; that is, they must break, burn and destroy parts that have little or nothing to do with the disease.

IN all cases where the bones are carious, or in which the natural passage is destroyed or rendered totally and absolutely useless, this operation is allowed by all to be necessary; but practitioners still differ about the instrument wherewith to perform it, some continuing to use the cautery, which burns at the same time that it perforates, others using an instrument which, like a terebra

bra, breaks the bone and lacerates the membrane.

THE antients preferred the cautery for reasons which have already been assigned; but since the symptoms of caries and callosity have been found to be very infrequent, and the os unguis has been perforated solely with a view to make an artificial passage for the lachrymal fluid into the nose, the cautery has lost part of its credit, and other instruments have been substituted in its place, less productive of present pain or future deformity; both which the cautery is too justly charged with.

BUT tho' these reasons have prevailed with many to lay aside the hot iron, yet it still has its advocates, who prefer it to every other instrument, and who have therefore endeavoured to obviate its inconveniences; they have directed the cannula, thro' which the cautery passes, to be made of a conical form, and so large



large at its lower end as not to touch it ; the upper part of the cannula is to be wrapped round with a piece of wet rag at the time of using ; the point of the iron is prevented from going too far by a check at its upper part ; and the general direction is to withdraw it as soon as it has pierced the bone.

BUT notwithstanding these and every other caution, the cautery gives great pain at the time of using, lengthens the case, and produces unnecessary deformity afterward, even in the hands of the most dextrous ; the union of the eye-lids has been destroyed in some, and an inversion of one of them thereby produced ; in others, what the French call *œil erailé* ; and in others so large a scar has been left upon the upper lid as to create a sad deformity for the rest of the patient's life ; not to mention the horror necessarily occasioned by thrusting a hot iron into the corner of the eye.

THESE

THESE are inconveniences which have attended the use of this instrument in the best hands ; from which may be guessed what must be done by it, when in those of the ignorant and unskilful, and therefore, unless some advantages are deducible from it which will outweigh these objections, it ought not to be continued ; let us therefore see what the intent of it is in the hands of those who best know how to manage it, and what are the benefits which they propose from its use.

THE defence against the heat of the iron, by the size and figure of the cannula, and by the wet rag, very plainly indicate, that its effect is designed to be executed by its point only ; and the check at the upper part as plainly shows that it is intended to pass no further than just through the bone ; if therefore it is not designed to produce any effect by its heat, on the parts through which it passes down to the os unguis, but merely  
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to burn through that and the membrana narium, and thereby make an opening into the nose, I do not see how it differs from any other perforator of equal size, except in cauterizing the edges of the divided membrane round the orifice, and thereby preventing its immediate closing.

THAT this is one part of the intention in this operation, by whatever instrument it is performed, is beyond all doubt; but it is also true, that this end is as certainly to be obtained by other means as by a cautery, and those much less mischievous.

OUR ancestors indeed had much more plausible reasons for its use than we have; their ideas of callosity and caries were to them indications of the necessity of such an application as they thought most useful in such cases; but now that we do, or at least may, know that these symptoms very rarely occur, that necessity ceases,



ceases, and we should no longer continue a horrid and a painful process, when we can obtain our end by gentler means; for whether the membrana narium be burnt through, or divided in any other manner, it must be the future method of dressing that must keep it open, and that as much in one case as in the other.

THE late Mr. Cheselden was a warm patron of the cautery, took a great deal of pains to prevent it doing mischief, and has said in its defence ‘ other methods  
‘ of curing this disease have been much  
‘ recommended, though often unsuccessful;  
‘ ful; but this, well performed, is infallible.’ After so positive an assertion, I am sorry to be obliged to say, that manifold experience contradicts it; there are many instances of perfect cures performed without the use of a cautery, and some of those which have been cauterized by Mr. Cheselden himself have not

flood found ; nor could he, with all the pains he took, sometimes prevent the effect of the heat of the iron on the eyelid, or leave his patient without a weeping eye.

UPON the whole, the disadvantages which may attend the use of the cautery being manifest, and the advantage which can arise from it being no more than can be procured by the use of a less mischievous instrument, it ought to be laid aside, and the os unguis perforated in another manner.

THE intention is to make an opening thro' this bone and membrana narium into the cavity of the nose, and to treat that opening in such a manner as that it shall most probably remain open, and give passage to the lachrymal fluid from the puncta lachrymalia after the sore is healed.

THE extream thinness of the bone renders the perforation of it a very easy matter, and if the breach made in it is of any tolerable size, I am not inclined to think that it is ever filled up again by any bony substance ; when this artificial passage is closed again, it is by the union of the membrane on each side of it, and therefore the surgeon's business in this case is to make a pretty large opening in the bone, and by rendring the edges on each side callous to prevent the orifice from being again closed.

FOR this purpose, different people have used different instruments, such as a large strong probe, an instrument like a gimblet, the curved trocar, &c. &c. each of which, if dextrously and properly applied, will serve the purpose very well ; the great necessary caution is so to apply the instrument to the bone as to pierce through that part of it which lies immediately behind the sacculus la-



chrymalis, and not to push it too far into the nose, for fear of injuring the os spongiosum, behind which it breaks its way : that the instrument is got through will be known by the flux of blood from the nostril, and the eruption of air from the wound upon blowing the nose. I have always used the curved trocar, which has answered the purpose exceeding well, and from which I have never found any inconvenience ; it should be about the smallest size of those generally made use of in the ascites, and the point should be directed obliquely downwards from the angle of the eye toward the nose.

THE most precise direction in this part of the operation will be of but little use to him who has no idea of the natural structure and disposition of the parts concerned, and who ought therefore to get such information as soon as he can ; but whoever is at all acquainted with

with this matter, or will attend to the situation and connexion of the os unguis, knows, or will immediately see, that this bone is divided as it were into two parts by a perpendicular ridge: to all that part of the bone which is anterior to the ridge, the lachrymal sac is connected; that which is posterior forms a part of the orbit, and has little or no connexion with the lachrymal sac; the trocar therefore must be applied to that part of the bone which is anterior to the ridge, and consequently behind the lachrymal bag: by the passage of the instrument all this part of the bone will in all probability be broken, and the fracture will extend perhaps a little beyond the ridge, tho' the less of the orbitar part is broke the better, as the breach of it can in no wise conduce to render the operation more successful.

THE same attention to the natural situation of these parts will shew, that

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if the instrument be passed in a transverse direction with regard to the nose, the os spongiosum superius will be wounded or broke ; and if it be passed in too perpendicular a direction, it will get into the channel of the natural duct, and its point will be stopped by bearing against that part of the maxilla superior which contributes to the formation of that canal.

It has been objected to this kind of instrument, that it may break the bone to some distance from the place where its immediate point is fixed, and that in all probability it lacerates or separates the membrane to the same or even a farther distance ; both these may in general be true, but as I have very frequently performed this operation, and have never yet seen the smallest inconvenience from it, I cannot think the objection of any weight : indeed, a total removal of a piece of the bone is rather to be wished for



for and aimed at, than feared or avoided; if we may reason by analogy, it seems to be the one thing necessary toward preserving a future passage; for we very well know in a caries of the bones forming the roof of the mouth, that though the bone is bare a pretty large compass, and by casting off leaves a large aperture into the nose, yet in many cases, when the disease is quite removed and the habit recruited, that opening will so contract, as not to suffer a quill to pass where you might with ease have introduced a finger, nay oftentimes will become quite close, especially where no caustic applications have been made use of to make or keep the bone bare: and therefore tho' the new-made opening in the os unguis may possibly be closed again, in spite of all endeavours to the contrary, yet the removal of a piece of the bone seems the most likely thing to prevent it; and on this principle I have always turned the perforator freely round,

round, whenever I have used it, and do attribute the success it has often had to its making a considerable breach in the bone.

THE manner of treating the fore after the perforation is made, will also contribute toward maintaining the artificial opening.

As soon as the operation is performed, a tent of lint should be immediately introduced of such size as to fill the aperture, and of such length as to pass through it into the cavity of the nose; this should be suffered to remain a day or two, or till the beginning digestion renders the removal easy; the upper part of the sac should be kept moderately distended with dry lint, or whatever will prevent it from becoming spongy, and the tent should be passed in through the opening of the bone every day, until the clean granulating appearance

ance of the sore makes it most probable that the edges of the divided membrane are in the same state ; the surgeon's care is now to prevent the incarnation from closing the new orifice ; for which purpose the end of the tent may be moistened in small sp. vitriol. or a piece of lunar caustic so included in a quill as to leave little more than its extremity naked, may at each dressing, or every other or third day be introduced, by which the granulation will be repressed, and the opening maintained, while by the daily use of a lint tent, or piece of plaster bougie, or a leaden cannula, the edges of the membranes may be rendered callous, and the communication between the sacculus and the cavity of the nose rendered thereby perpetual.

WHEN the sore is perfectly clean, and the granulating flesh from the sides of the sacculus kindly and good, the bougie should be passed through the open-

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ing in the bone instead of the tent, and the upper part of the fore be permitted to contract gradually by gradually lessening the dressings; in a few days after this, no other dressing than a piece of bougie will be necessary, which should now be of such a length that one extremity may lie level with the edges of the fore in the corner of the eye, and the other be within the cavity of the nose, some little way beyond the opening it passes through; by this means the fore will be reduced to the mere size of the bougie, which may be used until it is most likely that the artificial opening is perfectly established; and when that is presumed to be the case, the bougie should be disused, and the fore healed under a superficial pledgit with moderate pressure; and this method properly administered will succeed after many others have been tried, I know from experience.

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THERE is another method, which has been much recommended by some French writers as preventive of the closing of the opening of the os unguis; which is to introduce a cannula made either of gold, or silver, or lead, into the aperture, and to permit the sore to heal over it; this cannula will, it is said, in some remain a great while where it is placed, and give passage to the fluid from the eye; but in others it comes soon away by the nose.

FOR my own part, I cannot say any thing to it, having never had any occasion to try it; the cases of this kind, which I have had under my direction, having in general succeeded under some of the methods already mentioned; which methods will frequently prove successful, if the surgeon is clear in his intention, pursues it properly and steadily, and refrains from doing too much; though I must again repeat what I before  
 7 observed,

observed, that there is no method of treating this disorder which is infallible, none that will absolutely and in all cases prevent a return, especially in scrophulous habits; yet, when a just distinction is made between those cases which are in their own nature incapable of cure, and those which by being improperly treated are not cured, I am inclined to believe that the number of the former will be found much smaller than is generally imagined.

# *F I N I S.*

